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EXAMINER

WONG, TINA MEI SENG

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/730,460

Applicant(s)

ARELLANO, AARON G.

Examiner

Tina M. Wong

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

This Office action is responsive to Applicant's response submitted 26 September 2005.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,567,600 to Yoshida.

In regards to claim 1, Yoshida discloses a substrate (1) comprising heating elements (2a, 2b) for maintaining the circuit at a constant temperature. (Figure 4, Column 3) Yoshida further discloses an optical fiber (3) secured to the substrate. But Yoshida fails to disclose the length of the optical fiber to be pre-fabricated. However, although Yoshida does not specifically disclose a length of pre-fabricated optical fiber, Yoshida would need to decide a length of fiber to be formed on the substrate. Furthermore, although Yoshida does not specifically disclose a pre-fabricated fiber, Yoshida does disclose the fiber to be secured to the substrate and therefore must be pre-fabricated in order to be secured to the substrate. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used a length of pre-fabricated optical fiber. Yoshida further fails to specifically disclose the substrate to be partially flexible. However, Yoshida does disclose the substrate to comprise two sheet films. By definition, a film is "a thin, flexible, transparent sheet." (*The American Heritage® Dictionary of the English Language, Fourth Edition*) Therefore, although Yoshida does not

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explicitly state the substrate to be flexible, by definition, a sheet film is a flexible material.

Furthermore, the term partially is a relative term meaning "to a degree." (*The American Heritage® Dictionary of the English Language, Fourth Edition*) Since Yoshida states the substrate is flexible, the substrate must be flexible to a degree. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used a partially flexible substrate.

In regards to claims 2-5, Yoshida discloses all discussed above and further discloses the substrate to comprise a thermister temperature sensor (4). But Yoshida fails to disclose more than one temperature sensor. Yoshida further states that the fiber has portions that are untouched on and therefore cannot be monitored or controlled by the one temperature sensor. So, if Yoshida included an additional sensor, the fiber can be more adequately monitored and controlled. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used more than one temperature sensor, since it has been held that the mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Yoshida further fails to disclose the temperature sensor to be either a thermocouple or a resistance temperature detector. However, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used either a thermister, a thermocouple or a resistance temperature detector, since applicant has not disclosed that any specific temperature sensor solves any stated problem or is for any particular purpose and it appears the invention would perform equally as well with any temperature sensor.

In regards to claim 6, Yoshida discloses a substrate (1) comprising heating elements (2a, 2b) for maintaining the circuit at a constant temperature. (Figure 4, Column 3) Yoshida further discloses an optical fiber (3) secured to the substrate. But Yoshida fails to disclose the length of the optical fiber to be pre-fabricated. However, although Yoshida does not specifically disclose a length of pre-fabricated optical fiber, Yoshida would need to decide a length of fiber to be formed on the substrate. Furthermore, although Yoshida does not specifically disclose a pre-fabricated fiber, Yoshida does disclose the fiber to be secured to the substrate and therefore must be pre-fabricated in order to be secured to the substrate. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used a length of pre-fabricated optical fiber. Yoshida further fails to specifically disclose the substrate to be partially flexible. However, Yoshida does disclose the substrate to comprise two sheet films (5). By definition, a film is "a thin, flexible, transparent sheet." (*The American Heritage® Dictionary of the English Language, Fourth Edition*) Therefore, although Yoshida does not explicitly state the substrate to be flexible, by definition, a sheet film is a flexible material. Furthermore, the term partially is a relative term meaning "to a degree." (*The American Heritage® Dictionary of the English Language, Fourth Edition*) Since Yoshida states the substrate is flexible, the substrate must be flexible to a degree. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used a partially flexible substrate.

In regards to claims 7-9, Yoshida discloses all discussed above but fails to disclose more than one prefabricated optical fiber secured to the surfaces of the substrate. However, Yoshida does disclose a reel that the fiber is wound on. Although Yoshida does not specifically state

there is more than one fiber on the reel, more than one fiber can be wound on the reel.

Furthermore, the reel is secured to the two surfaces (5) of the substrate. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have more than one prefabricated fiber secured the surfaces of the substrate.

In regards to claim 10, Yoshida discloses all discussed above but fails to specifically disclose the temperature sensor embedded within the heating element. However, Yoshida does state the temperature sensor is arranged on one of the sheet films, which used to sandwich the optical fiber in order to form a substrate. Furthermore, the heating elements then sandwich the optical fiber sheets/substrate. Therefore, the temperature sensor is sandwiched within the heating elements.

In regards to claims 11-13, Yoshida discloses all discussed above but fails to disclose more than one prefabricated optical fiber secured to the surfaces of the substrate. However, Yoshida does disclose a reel that the fiber is wound on. Although Yoshida does not specifically state there is more than one fiber on the reel, more than one fiber can be wound on the reel. Furthermore, the reel is secured to the two surfaces (5) of the substrate. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have more than one prefabricated fiber secured the surfaces of the substrate.

In regards to claim 14, Yoshida discloses a heater circuit (1) and an optical fiber (3) secured to the circuit. But Yoshida fails to disclose the length of the optical fiber to be prefabricated. However, although Yoshida does not specifically disclose a length of pre-fabricated optical fiber, Yoshida would need to decide a length of fiber to be formed on the circuit. Furthermore, although Yoshida does not specifically disclose a pre-fabricated fiber, Yoshida

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does disclose the fiber to be secured to the circuit and therefore must be pre-fabricated in order to be secured to the circuit. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used a length of pre-fabricated optical fiber. Yoshida further fails to specifically disclose the substrate to be partially flexible.

However, Yoshida does disclose the substrate to comprise two sheet films. By definition, a film is "a thin, flexible, transparent sheet." (*The American Heritage® Dictionary of the English Language, Fourth Edition*) Therefore, although Yoshida does not explicitly state the substrate to be flexible, by definition, a sheet film is a flexible material. Furthermore, the term partially is a relative term meaning "to a degree." (*The American Heritage® Dictionary of the English Language, Fourth Edition*) Since Yoshida states the substrate is flexible, the substrate must to flexible to a degree. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used a partially flexible substrate.

In regards to claims 15 and 16, Yoshida discloses all discussed above but fails to disclose more than one prefabricated optical fiber secured to the surfaces of the circuit. However, Yoshida does disclose a reel that the fiber is wound on. Although Yoshida does not specifically state there is more than one fiber on the reel, more than one fiber can be wound on the reel. Furthermore, the reel is secured to the two surfaces (5) of the circuit. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have more than one prefabricated fiber secured the surfaces of the circuit.

In regards to claim 17; Yoshida discloses all discussed above and further discloses the circuit to comprise a thermister temperature sensor (4). But Yoshida fails to disclose more than one temperature sensor. Yoshida further states that the fiber has portions that are untouched on

and therefore cannot be monitored or controlled by the one temperature sensor. So, if Yoshida included an additional sensor, the fiber can be more adequately monitored and controlled.

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used more than one temperature sensor, since it has been held that the mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

In regards to claims 18-20, Yoshida discloses all discussed above but fails to disclose more than one prefabricated optical fiber secured to the surfaces of the circuit. However, Yoshida does disclose a reel that the fiber is wound on. Although Yoshida does not specifically state there is more than one fiber on the reel, more than one fiber can be wound on the reel. Furthermore, the reel is secured to the two surfaces (5) of the circuit. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have more than one prefabricated fiber secured the surfaces of the circuit.

In regards to claim 21, providing a substrate with a heater circuit, obtaining an optical fiber and securing the fiber to the substrate. But Yoshida fails to disclose the length of the optical fiber to be pre-fabricated. However, although Yoshida does not specifically disclose a length of pre-fabricated optical fiber, Yoshida would need to decide a length of fiber to be formed on the circuit. Furthermore, although Yoshida does not specifically disclose a pre-fabricated fiber, Yoshida does disclose the fiber to be secured to the circuit and therefore must be pre-fabricated in order to be secured to the circuit. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used a length of pre-fabricated optical fiber. Yoshida further fails to specifically disclose the substrate to be



partially flexible. However, Yoshida does disclose the substrate to comprise two sheet films. By definition, a film is “a thin, flexible, transparent sheet.” (*The American Heritage® Dictionary of the English Language, Fourth Edition*) Therefore, although Yoshida does not explicitly state the substrate to be flexible, by definition, a sheet film is a flexible material. Furthermore, the term partially is a relative term meaning “to a degree.” (*The American Heritage® Dictionary of the English Language, Fourth Edition*) Since Yoshida states the substrate is flexible, the substrate must to flexible to a degree. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used a partially flexible substrate.

In regards to claims 22-25, Yoshida discloses all discussed above and further discloses the substrate to comprise a temperature sensor (4). But Yoshida fails to disclose the temperature sensor to be either a thermocouple or a resistance temperature detector. However, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used either a thermister, a thermocouple or a resistance temperature detector, since applicant has not disclosed that any specific temperature sensor solves any stated problem or is for any particular purpose and it appears the invention would perform equally as well with any temperature sensor.

In regards to claims 26-27, Yoshida discloses all discussed above but fails to disclose more than one prefabricated optical fiber secured to the surfaces of the substrate. However, Yoshida does disclose a reel that the fiber is wound on. Although Yoshida does not specifically state there is more than one fiber on the reel, more than one fiber can be wound on the reel. Furthermore, the reel is secured to the two surfaces (5) of the substrate. Therefore, it would have

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been obvious at the time the invention was made to a person having ordinary skill in the art to have more than one prefabricated fiber secured the surfaces of the substrate.

In regards to claims 28-31, Yoshida discloses all discussed above and further discloses the substrate to comprise a temperature sensor (4). But Yoshida fails to disclose the temperature sensor to be either a thermocouple or a resistance temperature detector. However, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used either a thermister, a thermocouple or a resistance temperature detector, since applicant has not disclosed that any specific temperature sensor solves any stated problem or is for any particular purpose and it appears the invention would perform equally as well with any temperature sensor.

### *Response to Arguments*

Applicant's arguments filed 26 September 2005 have been fully considered but they are not persuasive.

Applicant argues Yoshida ~~et al~~ does not teach a partially flexible substrate. Instead, Applicant states Yoshida ~~et al~~ teaches a pair of substrates which are plates and therefore not flexible. Applicant further states the purpose of the EDF sheet is to "prevent bending." However, the Examiner disagrees. As pointed out in the previous Office action, the Examiner has referred to reference numeral "1" as a substrate. Yoshida ~~et al~~ discloses reference numeral "1" to be an EDF sheet comprising an EDF, thermister and two Teflon-based sheet films. Although the EDF sheet is used to keep the EDF from bending, no material is completely inflexible. Every material must have some degree of flexibility, otherwise, any pressure or force placed upon the EDF sheet, such as heating elements (2a and 2b). Since Applicant has claimed

the substrate to be partially flexible, and flexible is a relative term and every material must have some degree of flexibility to prevent damage or breakage, the EDF sheet is at least partially flexible.

Applicant also argues Yoshida ~~et al~~ does not teach more than one optical fiber secured to a first and second surface. However, the Examiner disagrees. Although Yoshida ~~et al~~ does not specifically teach using a reel to be advantageous in the specific embodiment described in the patent, it would still be advantageous to use a reel when handling additional optical fibers, such as for convenience and ease. The purpose of Applicant's claimed invention is for a different purpose than Yoshida ~~et al~~ and therefore, the disadvantages of using a reel in Yoshida ~~et al~~ does not necessarily apply to Applicant's claimed invention. However, using the reel would provide advantages to Applicant's claimed invention, such as ease in handling additional fibers, as stated above. Furthermore, if more than one temperature sensor was applied, as Yoshida ~~et al~~ discloses, the deficiency of the reel's inaccurate measurements can be solved.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

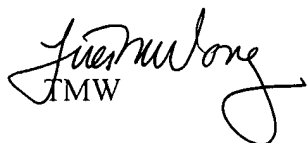
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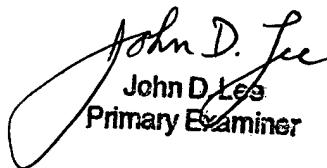
however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tina M. Wong whose telephone number is (571) 272-2352. The examiner can normally be reached on Monday-Friday 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
TMW

  
John D. Lee  
Primary Examiner